



**UNITED STATES DEPARTMENT OF COMMERCE**  
**Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

09/107,684 06/30/98 BLUMENAU

S E0295/7040-R

EXAMINER

LM01/0411

RICHARD F GIUNTA  
WOLF GREENFIELD & SACKS  
FEDERAL RESERVE PLAZA  
600 ATLANTIC AVENUE  
BOSTON MA 02210-2211

ENCARNACION, Y

ART UNIT

PAPER NUMBER

2751

DATE MAILED:

04/11/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

See Attached...

# Office Action Summary

Application No.  
09/107,684

Applicant  
Blumenau et al.

Examiner  
Yamir Encarnacion

Group Art Unit  
2751



☒ Responsive to communication(s) filed on Jun 30, 1998

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-9 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-9 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Art Unit: 2751

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The examiner was unable to determine the metes and bounds of the limitation "... the plurality of first storage locations are one different storage devices . . ." Clarification is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Art Unit: 2751

4. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by MEYER (USPN: 5,898,891).

Claimed	MEYER
1. A storage system for use in a computer system including a host computer, the storage system comprising:  at least one storage device having a plurality of storage locations; and	See figure 2. Notice storage devices 122, 124, 128, and 130 and the EIDE controller 118.
a controller that controls access to the at least one storage device from the host computer,	See figure 2, the EIDE controller 118.

Art Unit: 2751

the controller being capable of writing data to a first storage location of the plurality of storage locations on the at least one storage device in response to a communication from the host computer that does not include the data to be written to the first storage location.	In response to a DMA transfer command, see figure 4, step 206, the invention described by MEYER transfers "data from one mass storage device, such as a hard disk, to another storage device, without storing the data in a main memory array" (Col. 3, line 67 - Col. 4, line 2). Note that the DMA command that causes the data to be transferred directly from one device to another does not include the data to be transferred.
---	--

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2751

6. Claims 4-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over MEYER (USPN: 5,898,891) as applied to claim 2 above, and further in view of COKE (USPN: 5,708,849).

As to claim 4, MEYER does not explicitly disclose that the host perceives the first storage locations to be non-contiguous, however it is noted that MEYER discloses the use of a Physical Region Descriptor (PRD) table in column 6, line 51 through column 7, line 31 that describes the length (element 254) of the elements to be transferred. Also, note that MEYER discloses “multiple PRD data structures 250 can be linked together for form the PRD table and provide movement of data under a **scatter/gather mechanism**” (Emphasis added, column 22-25).

COKE discloses on column 1, lines 56-64 that:

“An example of a **scatter/gather** operation is one in which blocks of data stored at many different **non-sequential** addresses in memory is transferred to an input/output device entirely without the assistance of the host processor except to start the initial operation. Another example is one in which *data in an input/output device is transferred to and stored in blocks of memory at many different non-sequential addresses in memory* entirely without the assistance of the host processor except to start the initial operation.” (Emphasis added)

Therefore, as clarified by COKE, the scatter/gather mechanism mentioned by MEYER is a mechanism that those of ordinary skill in the art used to transfer data from/to many non-sequential addresses in memory.

As to claim 5, the examiner takes “Official Notice” that at the time of filing those of ordinary skill in the art were aware of Redundant Arrays of Inexpensive Devices (RAIDs) that were configured so that a plurality of physical disks was configured to work as a single logical device having the

Art Unit: 2751

data striped across all the physical devices. The RAID devices configured as above were known as operating in RAID 0 mode. Those of ordinary skill in the art found it desirable to use RAID 0 for the purpose of increasing performance. A person of ordinary skill in the art, having knowledge of RAID 0 would have found it reasonable to replace, for example, device 122 with a plurality of disks operating in RAID 0 mode because the RAID 0 disks would have had improved performance over the single device 122. Therefore, a person of ordinary skill in the art would have found it reasonable to replace say disk 122 with a plurality of disks operating in RAID 0 mode because the MEYER/COKE/RAID 0 combination would have had increased performance. The MEYER/COKE/RAID 0 combination meets the limitation of the claim because the limitation of the claimed "different storage devices" is met by the RAID 0 drive.

As to claim 8, the controller is only able to write to the elements indicated by the Physical Region Descriptor (PRD) table mentioned above.

Art Unit: 2751

***Conclusion***

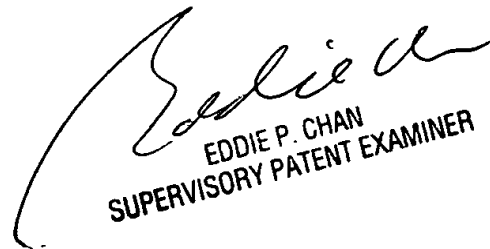
Any inquiry concerning this or an earlier communication from the Examiner should be directed to Yamir Encarnacion by phone at (703) 308-5466.

Any formal response to this action intended for entry should be mailed to Commissioner of Patents and Trademarks, Washington, D.C. 20231 or faxed to (703) 308-9051 and labeled "FORMAL" or "OFFICIAL". Any informal or draft communication should be faxed to (703) 305-9731 and labeled "INFORMAL" or "UNOFFICIAL" or "DRAFT" or "PROPOSED" and followed by a phone call to the Examiner at the above number. Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Yamir Encarnacion

Patent Examiner

March 31, 2000

  
EDDIE P. CHAN  
SUPERVISORY PATENT EXAMINER